

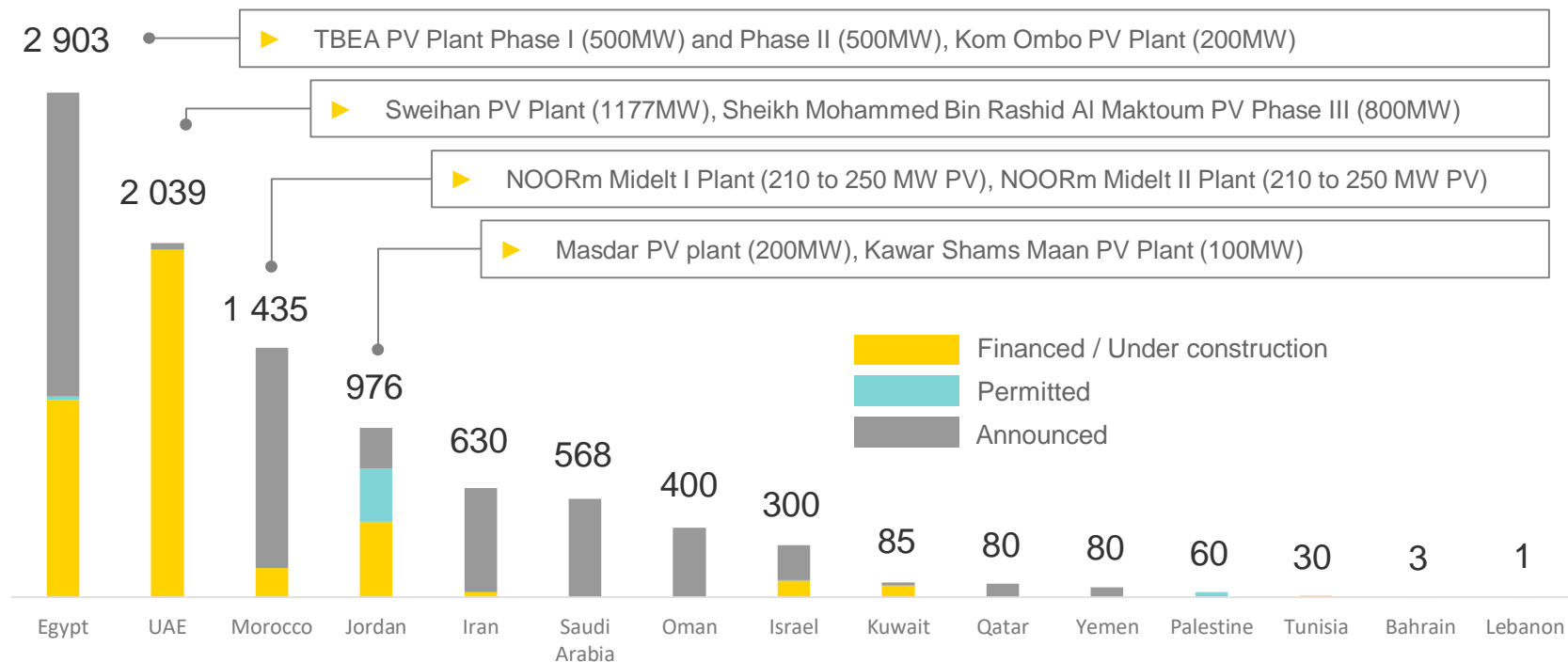


ATA webinar on Tunisia

## **Renewable energy auctions in Tunisia and the MENA region**

*February 14<sup>th</sup>, 2018*

## Solar PV projects by country \*

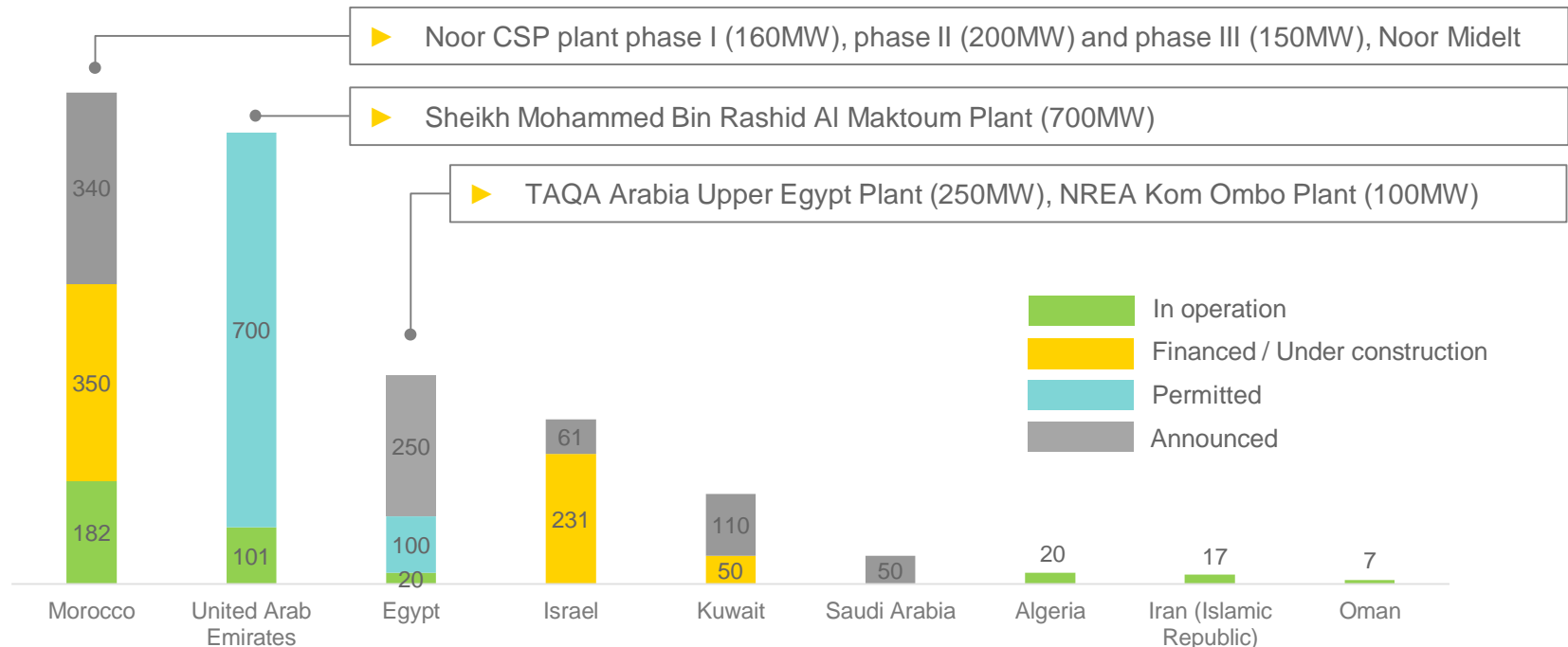


- ▶ Chinese TBEA SunOasis Co. to build a 1GW PV plant in Egypt (split in two 500MW phases)
- ▶ Sweihan PV plant is a 1.17GW solar PV project in UAE developed by Ingeteam Power Technology (Spain) - It is expected to be commissioned at the end of 2018

\* Includes only capacities announced, permitted, financed or under construction

Source: Bloomberg New Energy Finance

## Solar CSP projects by country \*

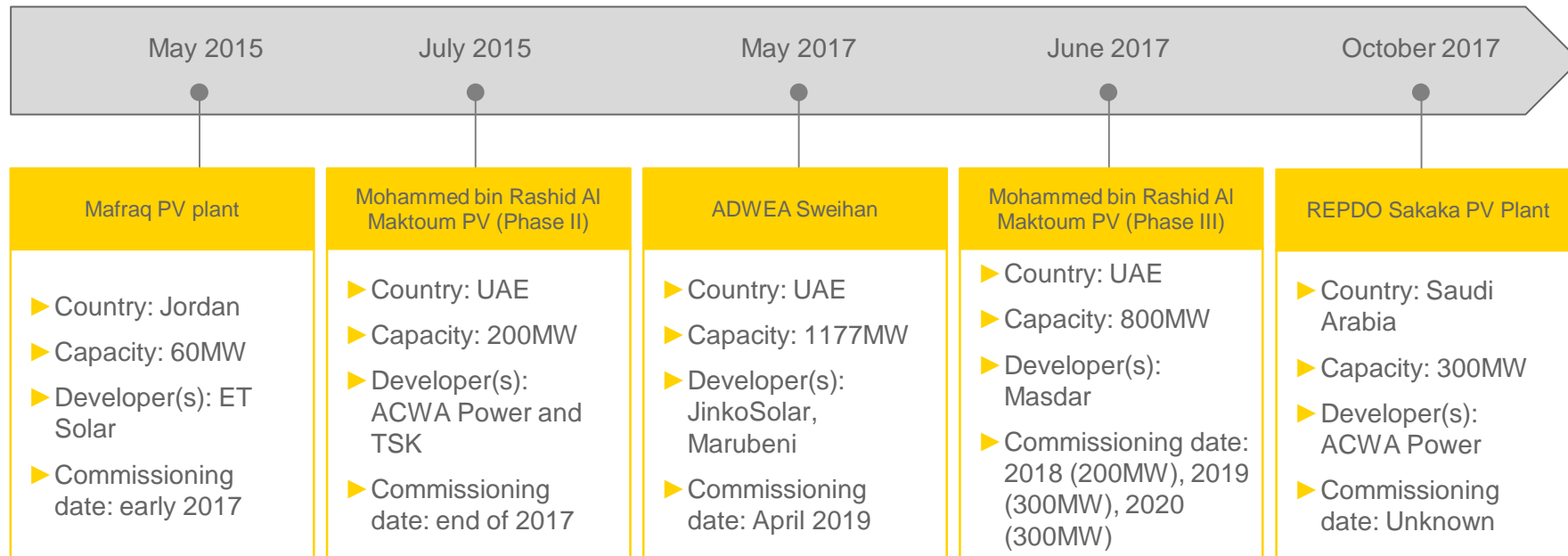


- ▶ Sheikh Mohammed Bin Rashid Al Maktoum CSP plant is a 700MW project expected to become the world's largest CSP plant - Project consortium is led by ACWA Power and China's Shanghai Power
- ▶ The Noor CSP plant phase III (150MW) is the first CSP project in the MENA region to use the tower technology - Noor phase I and II are parabolic trough CSP projects.

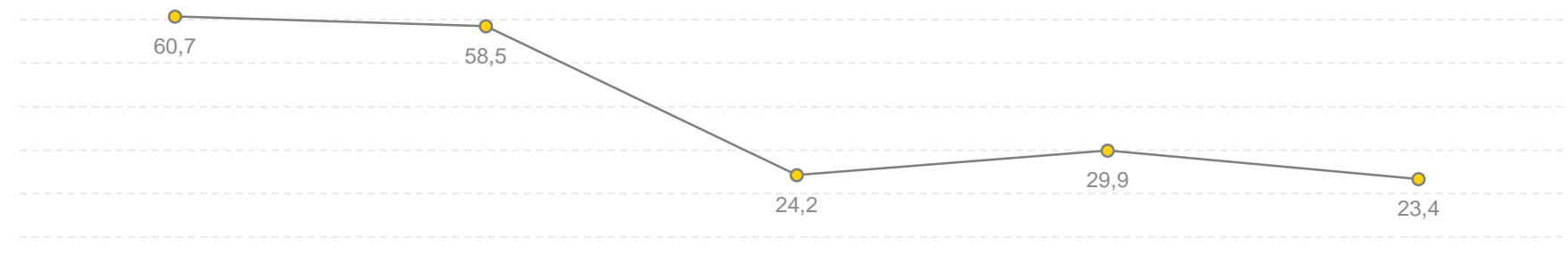
\* Figures excluding the 1 GW EOR plant in Oman (in operation)

Source: Bloomberg New Energy Finance

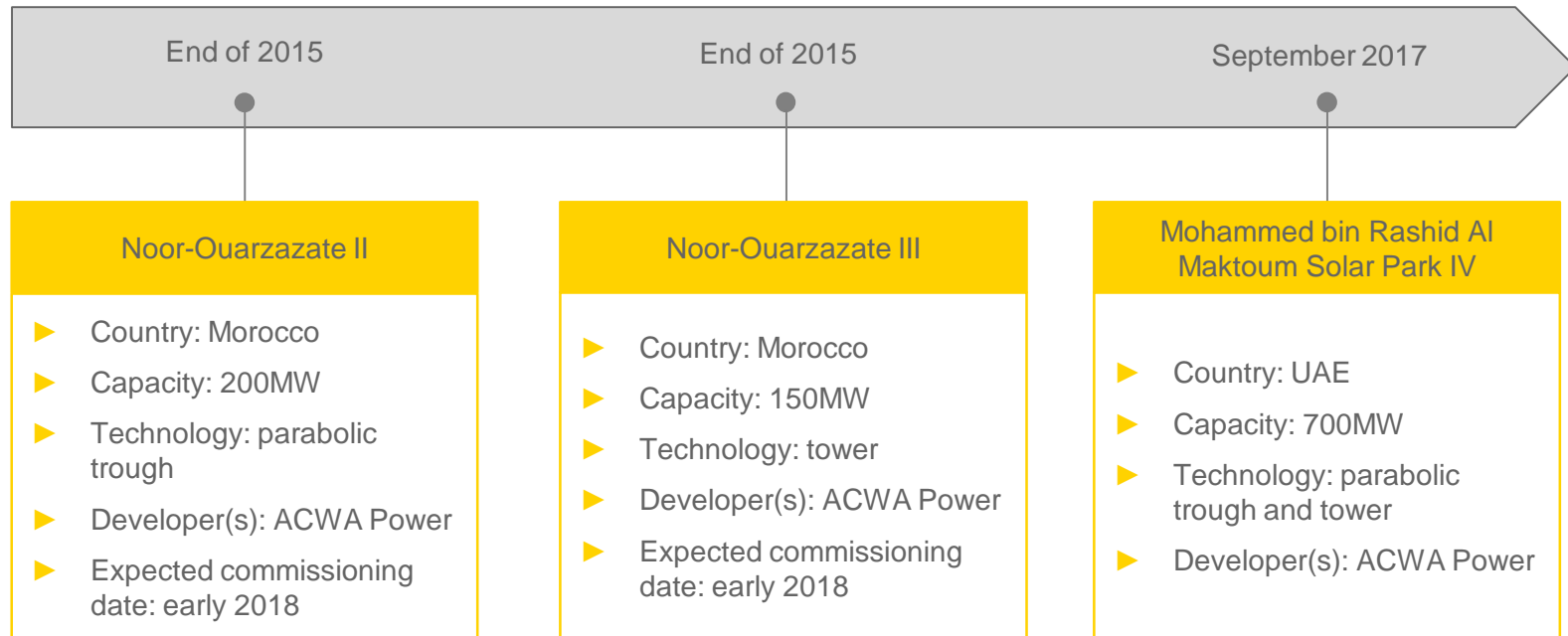
## Recent solar PV auctions results in the MENA region



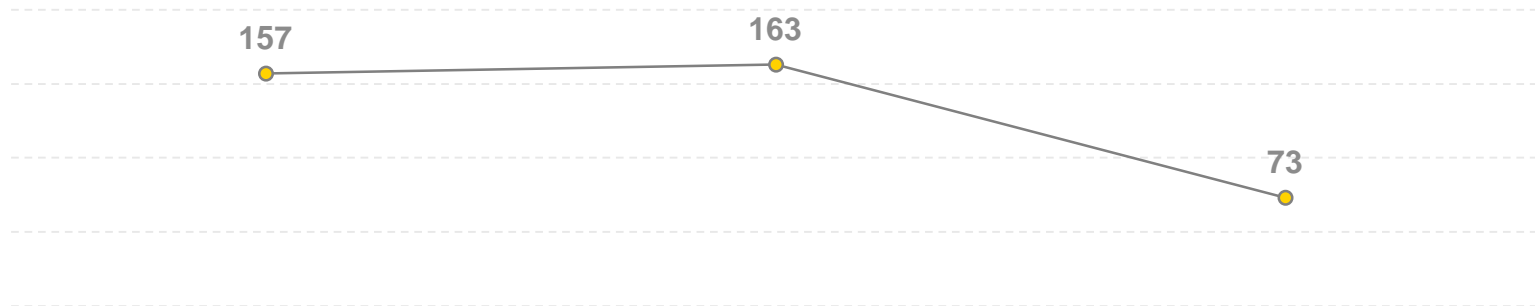
Awarded price (\$/MWh):



## Recent solar CSP auctions results in the MENA region



Awarded price (\$/MWh):



## Successful auctions design, and application to the Tunisia case

Item	Design options	Application to the Tunisian case *
Diversity of competing technologies	<ul style="list-style-type: none"> <li>▶ Technology specific auctions versus technology neutral auctions</li> </ul>	<ul style="list-style-type: none"> <li>▶ Technology specific auctions for solar PV and onshore wind</li> <li>▶ No bid possible for other technologies such as solar CSP or biomass</li> </ul>
Auctioned volume	<ul style="list-style-type: none"> <li>▶ Number of rounds, frequency of rounds, volume auctioned in each round</li> </ul>	<ul style="list-style-type: none"> <li>▶ Wind: 70 MW by Nov. 17, 70 MW by Aug. 18</li> <li>▶ Solar PV: 60MW by Nov. 17</li> <li>▶ Visibility on the long term pipeline needs to be clarified</li> </ul>
Encourage high level of participation	<ul style="list-style-type: none"> <li>▶ Appropriate complexity and transparency of administrative procedures</li> <li>▶ Limit bidders' transaction costs</li> <li>▶ Timely and comprehensive information to bidders</li> <li>▶ Relevant qualification requirements and compliance rules</li> <li>▶ Ensure reliability of the contract off-taker</li> <li>▶ Low risks related to the financial markets</li> </ul>	<ul style="list-style-type: none"> <li>▶ Bidders have to perform and provide resource assessments (DNI), feasibility studies, E&amp;S impact evaluation</li> <li>▶ Bidders need to perform and provide grid access studies validated by the STEG</li> <li>▶ STEG, the only possible off-taker, could provide additional guarantees on its financial capability</li> <li>▶ Possible risk associated with social and economic context in Tunisia</li> </ul>
Limit risk of collusion and price manipulation	<ul style="list-style-type: none"> <li>▶ Avoid revealing too much information on the auction demand</li> <li>▶ Prevent communication and exchange of information among bidders</li> <li>▶ Adoption of ceiling prices</li> </ul>	<ul style="list-style-type: none"> <li>▶ Selected bidders sign a 20-year PPA with STEG</li> <li>▶ No ceiling price defined in the ToR</li> <li>▶ Project that meet qualification criteria are ranked based on their tariff. Projects with lowest tariffs are selected until the total volume is reached</li> </ul>

\* MEMER, RE Auction Procedures Manual, May 2017

## Successful auctions design, and application to the Tunisia case

Item	Design options	Application to the Tunisian case *
Requirements regarding the bidders	<ul style="list-style-type: none"> <li>▶ <b>Reputation requirements:</b> information that must be provided regarding the bidding company</li> <li>▶ <b>Compliance rules:</b> bid bonds, rules related to project lead times, penalties for delays and underbuilding, penalties for underperformance, and the assignment of liabilities for transmission delays</li> </ul>	<ul style="list-style-type: none"> <li>▶ Information requirements on bidders' experience in RE development, construction, operation and financing</li> <li>▶ Information requirements on bidders' financial strength</li> <li>▶ Possible penalties not specified in the ToR</li> </ul>
Requirements regarding the project	<ul style="list-style-type: none"> <li>▶ <b>Technological requirements:</b> constraints on equipment used</li> <li>▶ <b>Project size requirements:</b> maximum and minimum size constraints</li> <li>▶ <b>Location constraints</b></li> <li>▶ <b>Grid access requirements</b></li> </ul>	<ul style="list-style-type: none"> <li>▶ No technological requirements</li> <li>▶ Up to 30 MW for onshore wind and 10 MW for solar PV (authorization regime)</li> <li>▶ Bidders must propose the project site</li> <li>▶ Bidders must provide a grid connection feasibility study validated by STEG</li> </ul>
Local content requirements	<ul style="list-style-type: none"> <li>▶ <b>Qualification requirements</b> promoting socio-economic development, for instance, inclusion of local content requirements</li> <li>▶ <b>Multi-criteria selection process</b>, for instance, offer a bonus to projects that use locally manufactured equipment</li> </ul>	<ul style="list-style-type: none"> <li>▶ Progressive bonus for projects that achieve a certain local integration rate (additional bonus each 5% above 10%)</li> <li>▶ Selection criteria related to employment creation during project construction and operation</li> </ul>

\* MEMER, RE Auction Procedures Manual, May 2017



## Your contacts

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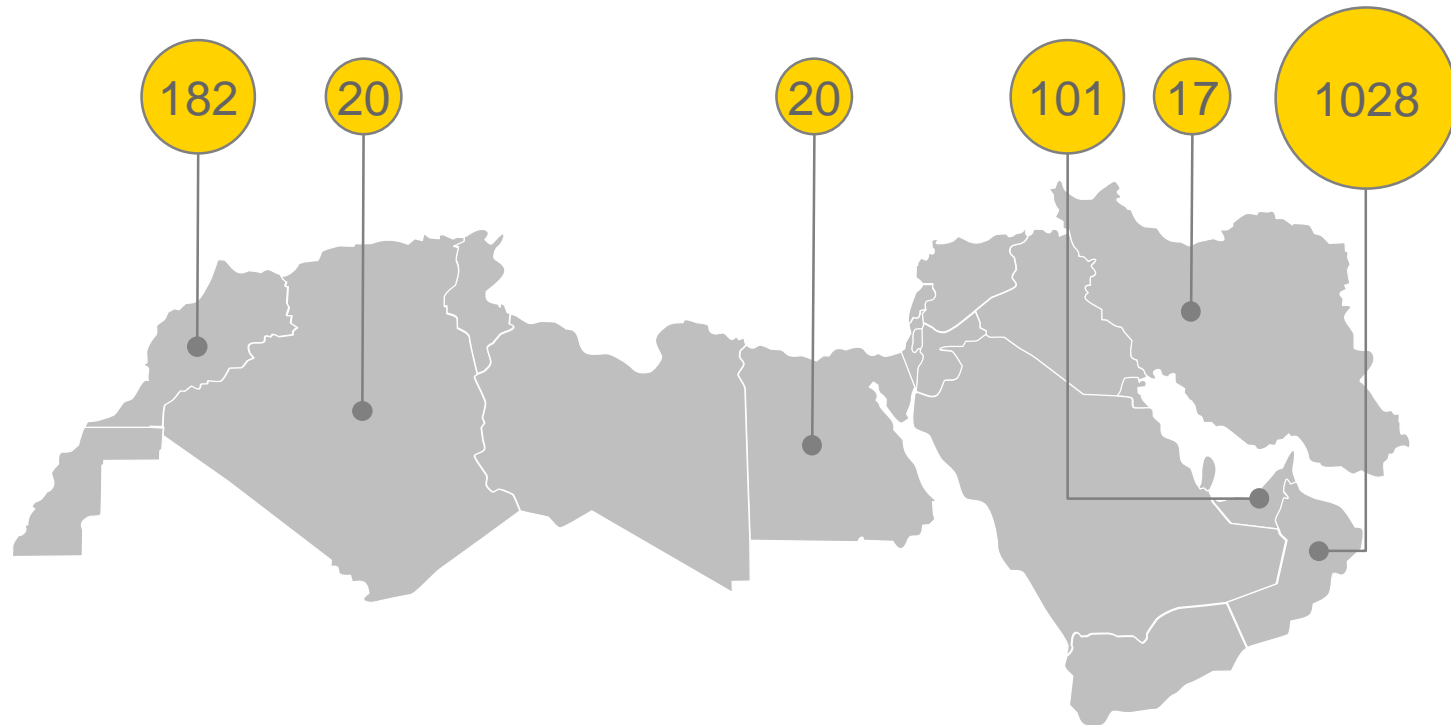
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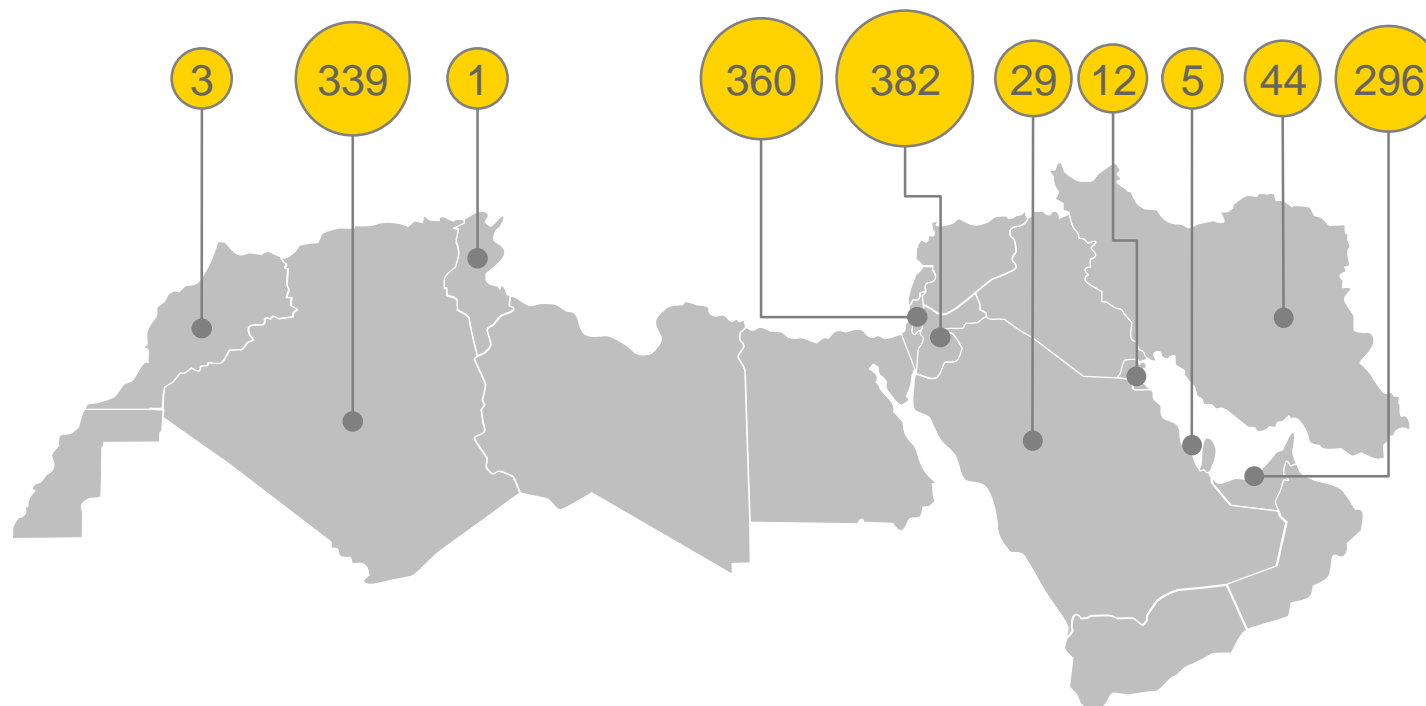
## Current solar CSP and CST installed capacities (MW)



- ▶ The Miraah 1,021MW CST project in Oman has started steam production on November 1<sup>st</sup>, 2017 and is currently the biggest CST project in operation in the world
- ▶ The Noor I plant, located in Morocco, is a 150MW CSP plant (parabolic trough) is in operation since December 2015

Source: Bloomberg New Energy Finance

## Current solar PV installed capacity in MENA countries (MWe) \*



- ▶ Sheikh Mohammed Bin Rashid Al Maktoum PV Plant Phase II is a 260MW PV farm located in the UAE, in operation since March 2017 - it is currently the largest PV plant in operation in the region
- ▶ The 100 MW Quweira PV plant, located in Jordan, is in operation since 2016

\* Utility scale projects only

Source: Bloomberg New Energy Finance